



Test Monitoring Center

6555 Penn Avenue
Pittsburgh, PA 15206-4489
(412) 365-1000

MEMORANDUM: 04-023

DATE: April 9, 2004

TO: Mark Sarlo, Chairman, Engine Oil Aeration Test Surveillance Panel

FROM: Jeff Clark

SUBJECT: Engine Oil Aeration Reference Testing for the April 2004 ASTM Report Period

The following is a summary of Engine Oil Aeration reference oil testing completed during the April 2004 ASTM period, which began October 1, 2003 and ended March 31, 2004. It should be noted that for the history of the EOAT, all data has been generated at one laboratory.

The following summarizes the status of the reference oil tests completed this ASTM report period:

Test Description	TMC Validity Code	Number of Tests
Operationally and Statistically Acceptable	AC	1
Failed Acceptance Criteria	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		1

Severity and Precision:

Figure 1 (attached) shows the current industry severity and precision EWMA control charts and the industry cusum chart for average engine oil aeration (AEOA). AEOA is currently within the industry severity and precision limits.

Since testing frequency is low, an estimate of precision by ASTM period will not be presented. Instead, the TMC will provide yearly pooled (across all reference oils) standard deviation as an estimate of test precision as shown in the following table.

EOAT Precision

Parameter	1995	1996	1997	1998
df	5	1	4	1
AEOA	0.26	0.07	0.27	0.21

Precision estimates for 1999 through 2003 are not available due to low test volume. The 1998 precision estimate for AEOA appears to be within historical levels. However, it should be noted that the small degrees of freedom for every year dating back to 1995 makes it difficult to draw any meaningful comparison of precision. Note, the degrees of freedom (df) equals $\Sigma(\text{no. obs. per oil} - 1)$.

Reference Oils and Hardware:

The table below shows the current AEOA test targets.

Parameter	Reference Oil	n	Mean (%)	S
AEOA	1004-2	13	9.46	0.25
	1004-3	-	9.46	0.25
	1005	2	7.80	0.25
	1005-1	-	7.80	0.25

The current test targets for oils 1004-3 and 1005-1 are based on oils 1004-2 and 1005 respectively. These targets will be updated at five tests. To date, four tests have been run on oil 1004-3 and four tests have been run on oil 1005-1.

Information Letters:

No information letters were issued during this ASTM period.

Additional Information:

The EOAT database, the industry LTMS plots, industry alarm log, and the EOAT Timeline may all be accessed from the TMC home page at www.astmtmc.cmu.edu.

JAC/jac/mem04-023.jac.doc

Attachments

c: J.L. Zalar, TMC

F.M. Farber, TMC

Engine Oil Aeration Test Surveillance Panel

<ftp://ftp.astmtmc.cmu.edu/docs/diesel/eoat/semiannualreports/eoat-04-2004.pdf>

Distribution: Email

FIGURE 1
EOAT INDUSTRY OPERATIONALLY VALID DATA

ENGINE OIL AERATION

